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Contributed Articles.

On Important Apilarian Subjects.

Bees Building Ill-Shapen Combs, Etc.

BY G. M. DOOLITTLE.

A correspondent writes me thus: "I have a colony of bees which built nice, thinly-drawn, beautiful combs in the middle sections of the super, while the outside sections contain some of the heaviest and most ill-shapen combs I ever saw. Can you tell me why this is so? Please answer through the American Bee Journal, as I take that paper."

Something of this kind has been spoken of before in our bee-papers, and some seem to think that such a state of affairs comes about by the changes in the weather, the thicker combs being built while the weather was cool, and the thinner when the weather was warm. Others account for it in a somewhat similar but different way, which is that as the thin combs were built in the center, therefore this shows that there is greater heat over the center of the cluster of bees than elsewhere, as would be natural, while the heat not being so great on the outside, made the wax less pliable, hence the thicker and irregular combs. But I do not agree with either of these, for, as far as my knowledge goes, bees do not attempt to work wax unless the temperature is right for the successful working of the same, and bees are capable of making a right temperature just when and where they please, as I have often proven with my self-registering thermometer. A small cluster of bees can easily keep a temperature of from 93° to 95° during a cold, frosty night, as many night experiments testify, and that is plenty warm enough for wax-working.

From past experience I should account for the state of affairs spoken of by the correspondent, as being the loss of the queen in that particular hive, and especially as he does not speak of noticing any other colonies building such peculiar comb. If cold had been the cause of the trouble, all of the colonies would have built thick, irregular combs as well; but as it was one particular colony that did so, we must look for the trouble at this point.

Several years ago I had a colony of bees that were nicely at work in the sections, having a part of them filled with comb, when one day, in handling the frames below, I lost the queen by her falling off the comb, as I suppose, and from that date until they got a laying queen they built the poorest and thickest combs that I had ever seen at that time. Many of the sections had the comb in them "stubbed" off at the sides and bottoms; some were not built more than half down when the cells were lengthened out, filled with honey and sealed over, so that very much of the honey was unsalable. Since then, in trying to control swarming by caging the queen, I

have had the same state of affairs, so that I am very positive that loss of queen was the cause of the whole trouble. In fact, I am often made to understand when a colony has lost its queen by the looks of the comb which they are building in the sections, thus being able to remedy the matter, when I otherwise might not know it, or not until the colony was considerably injured.

That not nearly as nice comb is built when a colony has no laying queen in the hive, is one of the reasons why I do not like the plan of taking away the queen in swarming-time to prevent swarming. Of course, where the sections are filled with thin comb foundation, better results are obtained, but even then the combs built by any colony not having a laying queen, are not nearly as nice as the same colony will give when the mother-bee is doing full duty in the hive.

GOOD QUEENS.—Another correspondent writes me thus, regarding the book, "Scientific Queen-Rearing:" "A friend tells me that you claim in your book on queen-rearing, that queens reared by what you term a 'natural process,' are better than those reared by other methods. Is this a fact?"

My book was put before the public with the sole purpose of benefiting the public, without any claims for it save a careful trial of the plans outlined in it by the one who was not fully satisfied with his or her present attainments along the line of rearing queens. I only wish to take space here to say that I do not claim for the queens reared as I advised in the book any superiority, because they are cradled in artificial cradles, or because these cradles are supplied with plenty of royal jelly into which the selected larvae are transferred, or anything of that kind. No, nothing of the sort. These are only conveniences to pave the way for having the queens reared just when and where we wish them, by that good and inexpensive way of having them reared in upper stories of hives having a laying queen below, to supply bees to care for these cells all summer, so that we need not keep making colonies queenless every little while to rear queens, thus avoiding lots of labor, and throwing many colonies out of their normal condition, only to shorten our surplus honey crop to the extent which we unqueen colonies for this purpose.

What I do claim as superior is in bringing the colony into that condition where they will rear queens *leisurely*, and under the *safe conditions* that they do in superseding their own queens without the interference of man, as all know the *very best of queens* are reared. When this can be done, and that, too, without having a queenless colony as a loss on our hands, I think that all will concede it to be of advantage so to do.

Borodino, N. Y.



It will pay any young bee-keeper to visit a large bee-keeper, who has a successful record, as one thus gains many hints that will be of great value to him.—Prof. Cook.

Phacelia as a Honey-Plant.

BY ANDREAS SIMON.

Among the many well-known honey-plants of this country and Europe, phacelia, a member of the family of Hydrophyllæ, has lately been lifted into special prominence by the Agricultural Supplement of the Illinois Staats Zeitung. In doing this, that paper was mainly incited by printed reports from the old country, where the high value of this plant as a honey-producer has quite recently been newly confirmed beyond any reasonable doubt.

It appears that the bee-keepers' society of the Kingdom of Saxony—a large and progressive body of men—undertook the task of instituting a general investigation among a goodly number of widely recommended honey-plants, for the purpose of ascertaining which of them ought to be selected as the best material with which to enlarge and improve the bee-pastures throughout the Kingdom. Phacelia was found to possess all the desired qualities, and to be the plant fulfilling the requirements in the highest degree. The aforesaid society started its researches by sending a trial package of phacelia seed to each district society in Saxony, and the latter again forwarded the seeds to the various branch societies, for the purpose of carrying on the desired experiments, and to observe the plant during its blooming period.

These experiments fully established all that was claimed for phacelia, and so as to induce bee-keepers to grow this plant extensively, the general society of bee-keepers of Saxony this year forwarded a *large* package of seed to each branch society, and each package was accompanied by printed directions, containing full instructions in regard to the methods to be followed where a successful culture of phacelia is to be aimed at. These directions were also reprinted in the German paper named above, a few weeks ago, and if the American Bee Journal should desire to publish them, the writer will gladly furnish a translation. Chicago, Ill.

[In the list of honey-producing plants found in the "A B C of Bee-Culture," phacelia is named. As it seems to be such a favorite in Germany, it might also prove to be valuable here. Doubtless bee-keepers would be glad to have the translation of the directions referred to by Mr. Simon, and he is hereby requested to furnish it, if he will kindly do so.—EDITOR.]



What Dr. Miller Thinks.

INTRODUCING QUEENS.—On page 425, Bro. Abbott says he always leaves his new queen caged in the hive two or three days before destroying the old queen. I may have been careless in my reading, but I don't remember to have seen that before. It looks like a good thing. For that queen is likely to be making some friends in that time, and an incident under my own observation makes me put trust in it. One spring, when a number of weak colonies petered out, I put five or six of their queens caged in a colony that had a laying queen, to be taken care of. The caged queens were taken care of all right. Then one of the caged queens was freed in the hive, and the others removed, and all was lovely.

BUYING QUEENS.—What Chester Belding says on page 424 sets one to thinking, and he may be partly right, at least. His idea is that the breeder picks out his best queens to sell at a high price as tested or select tested queens, and if you buy from the same man an untested queen you get only the refuse. But it must be remembered that when the tested queen is still untested the breeder knows nothing about her except her looks, and if all look just exactly alike he's just as likely to sell his best queen among the untested. Of course, they don't all look alike, but I'm inclined to think that a breeder

who is all right in every direction will not send out an untested queen whose looks make it a certain thing that she shall be poor. I confess I don't know as much as I might on this subject, and I wish Bro. Doolittle would tell us what chance he thinks there is for getting among untested queens one that shall equal the best among the tested.

PREVENTION OF SWARMING.—What will satisfy one will fall short of satisfying another. The swarming problem doesn't trouble Chester Belding (page 424) with only 10 in 50 swarming, but it would trouble him, I think, if he kept an out-apiary, or could not have some one at the home-apiary in swarming-time. If only 2 in 50 would swarm, then one could afford to let those two go off and lose them, but when it goes beyond that the loss is too heavy. I believe he makes a good point by raising the front of the hive to give abundant ventilation.

HONEY-VINEGAR.—I once made some honey-vinegar, and it was not at all popular in our family. They didn't want any more honey-vinegar. Now comes Bro. Secor, on page 428, speaking of it in the highest terms. I once tasted some made by T. F. Bingham that was fine, and generally it is well spoken of. But what I made was poor stuff, and I incline to the opinion that if you want first-class vinegar you mustn't use too much fourth-class honey.

SWEET CLOVER.—"Nothing will eat sweet clover, either green or when cut for hay," says James H. Wing, on page 434. A good many people around here think the same thing until they know better. Both cattle and horses will eat it here when they get used to it, and I'm told that stock must be used to it before they will eat alfalfa or even corn. I've seen the roadsides for miles where not a stalk of sweet clover was allowed to grow half its usual height, being constantly eaten down. Will others tell us whether well-cured hay from sweet clover cut before blooming is never relished by stock in any part of Kansas?

DR. DUBINI'S SWARMING MANAGEMENT.—I've taken lots of comfort in seeing that there's one Italian word F. L. Thompson couldn't make out (page 473), for I'm just green with envy to think he can read any. I turn over yearningly the pages of the Apicoltore, making out a word here and there, and wishing I had time to study the language.

Leaving other points untouched, I'd like to know why Dr. Dubini says, "placing the swarm on the stand of the old colony . . . is not for natural swarms, but assuredly for artificial swarms only." What is there in the case that makes it less desirable for natural swarms?

STRAWBERRIES.—Now that the smoke of the battle is clearing away, it may be well to inquire where "we are at" on the question of bees and strawberries. There seems to be evidence that in some cases bees pay no attention to strawberries, and in others that they do. Just exactly what per cent. of the total acreage of strawberries is profitably worked by bees remains unsettled, and will probably always remain so. Let us rejoice that bees work on strawberries in any case.

BEE-VEILS—ARE THEY NEEDED?—The article on page 430, recalls the difference on this question, some thinking they never need a veil, others thinking they should always be used. The writer of the article in question evidently intends to continue the use of a veil, no matter how much he may be laughed at. I can handle bees without a veil. Indeed, I don't always need either veil or smoke. There's a hive in which an experiment interests me, and at present I visit that hive daily or oftener, with neither veil nor smoke, generally bareheaded. But the truth is, that I nearly always have a veil when working with bees—at least have one on my hat ready to pull down

if needed, and pretty generally I don't wait to see whether it's needed before pulling it down.

I never wear gloves, because I'd rather stand the few stings I get than to have the discomfort and inconvenience of gloves. I don't think bees sting once on the hands where they do twice in the face, and I think I'd rather have two stings on the hands than one in the face. But I have handled some bees so cross that if a pair of gloves had been handy, I'd have put them on.

The doing without a veil with some bee-keepers looks a good bit like stubbornness. A veteran for whom I have high respect was one day with me, and I offered him a veil. Oh, no! he never used a veil; couldn't get him to touch one; but I noticed he kept the smoker puffing about his head all the time, and I thought if he'd been working with those bees he would have saved time by wearing a veil.

EVERY ONE TO HIS OWN WAY.—Messrs. McArthur and Bevins may as well let-up on the controversy about killing bees. They'll never agree. Two elements enter—profit and pain. One thinks the profit so great that he ignores the pain. Another thinks the pain so great that he ignores the profit. One man may be as kind-hearted as the other, but they measure differently.

OVERSTOCKING.—I gave a very decided nod of assent when F. L. Thompson said on page 437, "Overstocking is something of which little is known, and reliable data are greatly wanted." The fact is that it's exceedingly hard to know anything at all about it, and if you should come to something like a conclusion one year, the next year may knock your conclusions all endwise. I feel pretty sure that my home-apiahy is badly overstocked this year with 60 colonies, and yet next year double that number might do well. One phase of the matter isn't always considered. This very day I was talking with a man who knows so little about bees that he told me he fastened up the entrance to a hive so that not a bee could get out, in order to prevent a swarm leaving. Well, that man has beaten me in average yield of surplus, 10 to 1. And too many will say that his management must be better than mine, when the simple explanation is that 10 times as many bees are on my territory as on his. Where 50 colonies will starve in a poor season, 5 might yield a good surplus.

M. HAMET is spoken of on page 438 as "an intelligent and progressive French bee-keeper." A man of prominence and influence he certainly was, but some whom he bitterly opposed in their efforts to introduce movable-frame hives, that could, as he expressed it, "be taken to pieces like a puppet show," would hesitate to call him "progressive." He stubbornly remained a box-hive man most of his life. Whatever is "progressive" in French bee-keeping, is very largely due to a Frenchman of whom we Americans feel proud—Monsieur Charles Dadant, of Hamilton, Ill.

YELLOW BEES.—B. F. Harford says on page 449: "I will risk the conclusion that the yellow bees are all right in each and every respect, although Dr. Miller and others are of the opposite belief." I don't know exactly what I may have said to which Friend Harford refers, but there's nothing in my belief that hinders me from thinking that his yellow bees may be the best in the world. Being yellow doesn't make bees bad, and it doesn't necessarily make them good. Where great pains is taken to breed for color, there is danger of its being at the expense of more valuable qualities, and yet there may be such a thing as retaining all the best qualities along with bright color.

Marango, Ill.



See "Bee-Keeper's Guide" offer on page 479.

Small Nails for Spacing Frames.

BY CHAS. A. F. DOERR.

Referring to my article on page 389, Dr. C. C. Miller, on page 422, asked me to answer some questions in regard to the matter, as follows:

1. "Will he please tell us whether the top, bottom and end-bars are all the same width, one inch?" Why, Doctor, to secure an accurate spacing of the frames by this method, the top and bottom bars must be of the same width, one inch. That the end-bars are just one inch wide, is not absolutely necessary, but I make them so, because the frames are then easier to put together, so that they are square in every way, and not wry. This is very important—not to get troubled with brace-combs.

2. "What is the thickness of the top-bar?" As I make my frames (Gallup) out of common laths, such as are used in house-building, all the bars have the same thickness of these— $5/16$ to $3/8$ of an inch. In making a Langstroth frame, I think the top-bar should be thicker in order to prevent sagging.

3. "Please tell us why the two nails on one side of the frame are not both at the same end." This very same idea struck me two days after sending my former article, and I at once made a set of frames, at the same time putting the spacing nails as near the ends of the bottom and top-bars as would be advisable; hived a swarm on them, and compared this new frame with its elder brother (or were they sisters?). The younger was much the superior of its elder, as the frames can now be taken out of, and put into, the hive without injuring the neighboring frames in the least.

4. "How far apart must the frames be pushed so you can easily put another frame between them?" If all the frames are square in every way (not wry), $3/8$ to $1/2$ of an inch will do.

As to brace-comb, I think it is very important that all hives stand perfectly level; that the frames are made rectangular; that top and bottom bars are not wry. If this is the case, the frames will hang perpendicularly in the hives, the combs can be built perpendicularly in the frames, and they can be exchanged as you please, and yet the surfaces of the combs will remain about the same distance apart. I believe many are negligent on this point.

Maywood, Ill.



Something on Nectar-Secretion—Paralysis.

BY JAMES CORMAC.

Mr. L. S., of Aurora, Ill., asked Dr. C. C. Miller how long white clover (*Trifolium repens*) has to bloom before it yields honey (see page 393). L. S. said that it was in full bloom, but the bees did not work on it. The Doctor replied that at Marengo, June 3, it presented the same conditions, and further, that there was a lack of rain, but did not believe it was from that cause. The same conditions prevailed here in Iowa, but no lack for rain, as we are now and have been well supplied. Vegetation, for the past 20 years, has never been more luxuriant. It is from the want of moisture for the past two years, and from the same cause elsewhere, where rain did not fall in sufficient quantities last year; also too close pasturing during the season.

The year 1894 will be long remembered as one of excessive heat and great drouth—almost an entire failure in rainfall for months; vegetation withered and became as sear as if stricken with frost; even large, stately trees succumbed, and were killed outright. Hot winds scorched and dried up almost all vegetation in many localities.

All vegetable growth is, by aggregation of cells, filled with starch composition, carbon, hydrogen and oxygen, with two equivalents of water. This starch is stored in the roots,

trunk, branches and leaves; in other vegetation, roots, stems, leaves and seeds.

As I am here principally dealing with white clover, the above will present the foundation for my explanation of the cause of failure to secrete honey, otherwise nectar. As moisture and heat are necessary for vegetable growth, these conditions must be existent to a normal amount in any region, and especially active in the temperate zones, as the season of vegetable growth and maturity is shortened by the regular return of the cold season.

Favorable conditions must exist, a seasonable time to permit of cell-formation, and sufficient formation and deposit of starch both in the roots and stems, principally in the roots of the clover; and in stems and leaves of annual honey-producing plants, producing nectar later in the season. As clover blooms earlier than most nectar-producing plants, favorable conditions must maintain the previous year, as most of the pabulum that is consumed in the growth of leaves, stems and bloom must be on deposit in the roots, and they well supplied. This cannot be accomplished if deprived of a normal amount of moisture, not only during the spring months, but throughout the summer and fall. Winter snows assist this storing and elaborating the starchy product for immediate use in the spring, as the circulation of sap is not checked to the extent as when the ground is hard frozen. This storing and elaborating process furnishes the plant with early food. An early and vigorous growth is obtained in the leaves, which are the lungs of plants. Circulation of sap is therefore hastened, the roots stimulated to an equal expansion, then favorable conditions continuing, a visible supply is obtained, and a surplus is thrown off as nectar through the nectaries of the bloom. Otherwise what is stored in the preceding year is consumed only in plant growth, even to the depletion of stores, to produce seed, and all seed is almost wholly starch.

There must exist other favorable conditions. It may be dry during the period of nectar-flow, and not mitigate against it, if during this period electrical conditions maintain to the production of ozone, which being absorbed by the leaves, the same as carbonic gas, through pores in the leaves—as oxygen is to animal life, so carbon is to vegetable life.

Some smiled at the prophecies of Wilson, of Tennessee, but he was more than half right in his predictions.

Close pasturing works injury to nectar-secretion, as it reduces the foliage, so also the rootlets suffer as nature strives to sustain a just proportion between leaves and root expansion, causing scattered nectaries in the blossom, or only partial development.

The past year's drouth naturally affected the basswood in this section, which, at this writing (June 26), is in greater profusion of bloom than that of 1894, but diminished in nectar. Deprived of white clover, we placed our dependence upon that for section honey—another disappointment; therefore, apiarists must look to fall flowers for winter stores, or patronize the sugar-barrel as we have done in year's past.

Though the present summer has an ominous look, we bank largely on 1896. The plentiful supply of rain has stimulated growth to a wonderful extent, that has not been excelled for the past 20 years. The scant remains of clover is being wonderfully stimulated, either from remains of rootlets or seeds, and is taking its place with other forage-plants as of years past. But for all this, we have given up hopes of former yields, consequent upon increasing population, and the turning over of grazing lands for cultivated crops.

The apicultural specialist, unless farmers can be convinced to seed with Alsike in place of red clover, must vacate the premises. Persuasion seems almost useless, as custom has established their methods, and they are almost as unchangeable as the law of the Medes and Persians was reputed to be. Yet progressive farmers claim Alsike the best forage-plant, also for fodder.

BEE-PARALYSIS.—J. W. P., of Omaha, Nebr., on page 394 of the American Bee Journal, in his experience with a colony crawling out of the hive and dying, asks the cause. It is known that nectar of certain flowers taken by bees causes vertigo and death, and is accompanied with similar symptoms as bee-paralysis, except the loss of hair. The probable cause is poisoning—may be from spraying poisons. The adoption of spraying has become almost a "fad" with many; spraying to excess gardens, orchards, shrubs, etc., and in many cases loss has occurred. In a severe case of bee-paralysis, in a colony with a Texas queen this spring, well supplied with good honey, on trial of sundry remedies, and failures, I used finally equal parts of benzine and turpentine, taking out the frames and spraying the hive with about a tablespoonful of the mixture. The first dose helped wonderfully, and using it every other day three times more, the disease disappeared entirely. Now that colony is as strong as most in the apiary, and storing as fast as any. Will others try it, reporting through the American Bee Journal? Des Moines, Iowa.



A Swarming Experience—Other Things.

BY EDWIN BEVINS.

I feel, Mr. Editor, as if I would like to lick the man who said in answer to Query No. —, that he never "commenced to divide." I thought that if he could get along without dividing, perhaps I could get along the same way, and so this season I have allowed the bees to swarm according to nature. Result: One of my most valuable queens and a half bushel of her offspring are gone to the woods. Another swarm landed on a large limb of a tolerably high oak-tree, standing in the door-yard, surrounded with the summer's supply of firewood. A hive was placed on the wood-pile, and the limb was partly sawed off and swung so as to bring the bees in front of the hive. As soon as they made themselves at home in the hive, I started to carry it to the old stand, but lost my footing on the wood and fell with the hive under me. The cover slipped about half way off, but before the bees recovered from their astonishment sufficiently to fly out, I had the cover in place and carried the hive to the stand without the loss of any bees. I think that I shall "commence to divide" pretty soon, unless somebody sends me a self-hiver that will catch them every time.

LOW-GROWING TREES, ETC.—I have experienced this season some of the advantages of having low-growing trees and grapevines near the bee-hives. The hives are situated on the south side of an apple orchard, and in front and among the hives are cherry, peach, plum and pear trees, and grapevines. I have harvested three swarms from the same place on one grapevine, and two from one small cherry-tree. Several swarms have alighted in the apple-trees.

HIVE-COVERS.—I want to say to Dr. Miller that my hive-covers show but little disposition to twist. If any of them do, I take it out of them by attaching hive-hooks near diagonally opposite corners. Since I fell down with that swarm, I am more delighted than ever with these covers with the heavy cleats.

Dr. Miller solemnly concludes that I was trying to make fun of Doolittle's old man. I as solemnly aver that I was not trying to do any such thing. The old man has stood up on that narrow platform, in that indescribable foot-wear, and under that dilapidated and shapeless old hat, about as long as it is in well-regulated human nature to stand it. I am going to buy my next queen of Doolittle, and then if he does not get the old man a pair of new boots, and a new hat, and put some things in between to correspond, I will not buy any more of him—that's all! Leon, Iowa, July 2.

Notes AND Comments.

CONDUCTED BY

Rev. Emerson T. Abbott, St. Joseph, Mo.

One Live Specialist Found.—The following letter will indicate that there is at least one live specialist in the honey-business in the United States:

LAS CRUCES, NEW MEXICO, May 29, 1895.

MR. E. T. ABBOTT, St. Joseph, Mo.,

Dear Sir:—In your article on page 270, you ask if there is anyone in the United States who makes a living out of bees alone; if so, to hold up his hand. Well, here comes one with both hands up. I make a living out of my bees and have no side-shows of any kind, and also have some money left over my living. You ask, "How do I do it?" Well, I keep on an average about 200 colonies of bees, work them for comb honey, and sell wherever I can find a market. I have new honey now ready for sale.

J. G. STEWART.

Cannot Friend Stewart give us a short article on bee-keeping in New Mexico? Tell us from what his bees gather the most surplus, how much he gets per colony, etc. In fact, give us any information which he may have that will be of interest to the general public.

Stinging of Bees—Are You Sure?—"A bee never volunteers an attack, save in the immediate neighborhood of its hive, and even then never without some reason."

This is quoted from an article in the British Bee Journal, but I have seen substantially the same thing in a great many other places; but notwithstanding this, I am inclined to think the statement a little too sweeping. I have come in contact with bees which seemed to me to take a special delight in stinging without any provocation at all, and this without much reference to their hives. I think it would be well to modify the above statement by saying: "Most bees rarely ever volunteer an attack without some provocation, and then only in the immediate neighborhood of their home." This would avoid the possibility of having the statement called in question; for if we make stronger claims for our cause than we can substantiate, we only weaken it in the end. It is well, if possible, to impress upon the minds of the general public that the ordinary bee does not go around seeking whom she may devour, but there is nothing gained, in my opinion, by presenting her as an entirely harmless creature, which can be handled with impunity. I have found by experience that she is not always built that way.

Swarming—Which is Which?—"Prevention of swarming does not come under the head of advanced bee-culture. It is a step backward. encourage bees to the point of swarming and it will be found at the same time that they are encouraged to gather and store honey in a way that indicates great energy and activity."—Henry Alley, in 1893.

"While the steel-gray strain of Carniolan bees will swarm themselves to destruction, there has never been a swarm issue from a colony of Adel bees in the Bay State Apiary since the gray, or dark blood, was bred out. The more true steel-gray bees found in a colony the more they would swarm. The more yellow-banded bees the less they have swarmed, till now they do not swarm at all."—Henry Alley, in 1895.

Friend Alley seems to be a little mixed, or else he is letting self-interest warp his better judgment. It seems to me that he does not do the true Carniolans justice. I had them in my apiary for a number of years, and I did not find them any more inclined to "swarm themselves to destruction" than are the Italians. The queens are great layers, and the colonies build up very rapidly, and, of course, if they are not given room "according to their strength," at the proper time, they will swarm, and so will the Italians; and I cannot help but think that Friend Alley's so-called "Adel" bees will do likewise.

Apis Dorsata—A Question.—"Do we want Apis dorsata?"—Gleanings.

Well, I suppose that depends very much upon who is meant by "we." If I am included in the "we," I can say for one that I have no special yearning for the animal at present. Of course it depends some upon who is to be sent after her. If I am to go, and there is enough "in it," then, of course, I

want her very badly. If the other fellow is to get the job, and I am to have nothing to do with it, then I am dead set against having anything done with Madam Dorsata at present.

It seems to me, to be frank, that this whole dorsata business is a neatly gotten up scheme in the interest of one individual, and that the mass of the bee-keepers have no interest whatever in it. If the Government wants to encourage apiculture, it can find a field of operation without sending any "special agent" to the jungles of India. It might try its hand a little on the improvement of *Apis mellifica* at home.

There is a gentleman at Washington now who is accredited as the "Special Agent in Apiculture," but if he has done anything to promote the general interest of the industry, I have failed to learn about it, unless it be a thing of special advantage to have the report of the last North American Bee-Keepers' Association withheld so it can be published with the report of the meeting to be held in Canada in September.

I have heard it hinted that this special agent was writing a book on apiculture to be distributed free by the Government. Well, this may help the industry, and it may not. There are some very good books on the subject now, and they cost but little. Even if this should prove to be the book *par excellence*, if it is as long coming in proportion as the report of the North American, we will all have departed to the bourne from which no traveler returns, before it is published.

But I wander from my subject. As to wanting Madam Dorsata, I say no.

Questions AND Answers.

CONDUCTED BY

DR. C. C. MILLER, MARENGO, ILL.

[Questions may be mailed to the Bee Journal, or to Dr. Miller direct.]

Growing Basswood from the Seed.

DR. MILLER:—One of your correspondents, on page 426, asks when to plant basswood seed, and you say you don't know. I will tell you what I know about it, and you can use the information as you see fit. I presume there are lots of bee-keepers who would like to know, and I feel sure they should all be raising basswoods.

The seed should be gathered when ripe, and mixed with moderately damp sand and packed in a box in the cellar where it will not freeze. Wet the sand two or three times during the winter, so that it will not become too dry. In the spring, sow broadcast in open ground or in drills, as you would peas, and cover very lightly. The roots start first, and grow down into the ground; the sprout starts afterward, and gradually assumes an erect position. If they are covered too deeply they will never rise. Less than a quarter of an inch is enough. The bed should be kept damp, and to prevent evaporation it is well to cover with muslin, as in a cold-frame.

Denison, Iowa.

GEO. W. STEPHENS.

That's right to the point, and we certainly owe Friend Stephens a hearty vote of thanks.

Non-Swarming Bees—Queen-Rearing.

On page 419, the question was asked whether swarming or non-swarming bees were preferable. The majority seemed to favor the swarming kind. Now I have had but little experience in the apiary, this being the seventh year I have kept bees, and paid but little attention to them until last year, when I bought a few books, subscribed for two bee-papers, and commenced giving the bees special attention. You see my experience is very limited, but this much I know, and that is, that I want the non-swarming bees. I have a colony that has not swarmed since I have had them, and that is over five years, this being the sixth season, and no swarm yet. They do not look to be overly strong at any time, but they get the honey just the same. They have given me over 100 pounds of surplus comb honey every year since I have had them, and in 1893 they gave me 147 pounds of nice comb honey, this being the largest amount they have given me any season so far. (During these same years some of the other colonies gave me no surplus at all.) I want to rear queens from this queen, and stock most of my apiary with her daughters this fall. I lately bought Doolittle's "Scientific Queen-Rearing," and will use his method of rearing queens.

Now suppose I take these queen-cells just before they

hatch, put them into cell-protectors, and place them in the supers on the hives of queens which I wish to supersede, will these bees allow this queen to hatch, take possession of the brood-chamber, and will they then kill the old queen?

Owing to dry weather we will have a very light crop of honey here this season.

Harrisonville, Ill., July 6.

ANSWER.—I've never tried that in the fall, and it doesn't succeed in the beginning of the honey harvest, but we have the word of an excellent authority, G. M. Doolittle, that the plan you propose will be a success if practiced at the close of the honey harvest. If I were in your place I think I would commence operations right away, and if the first cell given to a colony does not succeed, I'd have another ready to put in its place as soon as the young queen from the first cell was destroyed.

Won't Work in Sections—Potato Blossoms.

My bees have failed to work in the sections when there are starters, and some sections partly filled with comb and honey, and are crowding the queen out of the brood-nest.

1. Do you think it would do any good to uncup the sealed honey in the brood-frames, and put them back? I have no extractor.

2. There is something the matter with one of my colonies—is it foul brood or not? There is dead brood of all stages from the smaller size to the fully developed bees. The larvae are of a brownish cast, and settle to the bottom of the cell, but it will not adhere to a toothpick, as the books say.

3. Do bees work on potato bloom? If they do, do you suppose they could have been poisoned by bug-poison on the potatoes?

D. E. D.

Whittington, Pa., Ind., July 8.

ANSWERS.—1. It might and it might not. It will do no harm to try. Generally when they will not work on sections partly-filled with comb, it's because there isn't enough nectar yielding.

2. I hardly think it's foul brood.

3. I never saw bees work on potato blossoms, and yet I think I have read of cases in which it was supposed that bees were poisoned through poison on potato-vines.

Rearing Queens—Laying-Workers.

The past spring I had a strong old colony in an old, out-of-date hive that I wanted to get rid of, so I divided them, by taking the old queen and the most of the old bees and putting them into a new hive full of foundation. Then in 21 days after everything was hatched, I transferred the two swarms from the old hive into a new hive full of foundation, and they went to work like beavers, and have their hive nearly full of honey. They were put into the new hive 15 days ago. I examined them to-day, and they have only just a very little brood started.

1. What I want to know is, whether a queen reared by the young bees from the brood that was in the old hive would bring forth a good laying queen, or whether she would be of inferior quality?

2. I also want to know whether a laying-worker's eggs would bring forth good, strong worker-bees? Could they rear a good, strong laying queen from brood-eggs laid by a worker-bee?

I have 25 colonies all in good condition, but bees have gathered very little honey on account of the dry weather.

Rawson, Ohio, July 3.

L. H.

ANSWERS.—1. If there were plenty of bees in the hive they could rear a good queen.

2. No, you can't get worker-bees either strong or weak from the eggs of laying workers. Neither can you rear a queen from such eggs. They will produce nothing but drones.

Two Swarms that United in the Side of a Dwelling-House.

I have three colonies of black bees, two in 10-frame hives, and one colony in a double-walled box-hive, and they are doing well so far this summer. They have plenty of basswood blossoms in this locality during the summer season, and also such as golden-rod, boneset, catnip, mint, sumac and white clover.

On May 30 there came a swarm of hybrid bees to my house at about 5:30 p.m. Not being home at that time, they went in at a knot-hole at the top weather-board of the house.

Also on May 31 there came a swarm along at 9:30 a.m., and happening to be around I tried to make them cluster on a tree by throwing ground and sod into the flying swarm. On account of them coming so near the house, they mixed with the flying bees that went in on May 30, so there are two swarms together. They have two entrances where they pass in and out, the one entrance about two feet below the other. The lowest entrance I enlarged some by boring the hole larger. They have 3 feet deep, and 3 feet from one studding to the other, the studding being 3x4, so they have that much space between the weather-board and the lining of the inside. The weather-board is about 12 feet long from the corner to where they are joined. Would you advise cutting the boards, or taking off the whole length? I thought of sawing the weather-board along the studding, and to transfer them into an 8-frame chaff hive, on account of there being so many bees. I am afraid there are too many for an 8-frame hive. Or would you leave them in the house until next summer, and hive the first swarm that they cast, and transfer them? They are no hindrance in the house, only I am afraid they would freeze during the winter.

E. T. R.

Chain Dam, Pa., July 8.

ANSWER.—I should be afraid they might not winter in such narrow quarters, and would prefer to get them out as soon as possible. A carpenter could tell you better than I whether to cut or take off the whole length, especially if he looks at the place. I hardly think you will find much trouble in getting them into an 8-frame hive, but if there should be too many bees for that, you can easily give them a second story, and with 16 frames they certainly will not be cramped for room. If two large swarms united, one of the queens would be killed, and the number of bees would be less now than when they came.

Getting Bees to Work in Supers.

I have a few colonies of bees in 8-frame dovetailed hives with supers on, and a little honey coming in. They have about three pounds of honey besides pollen in each frame, on an average. Of course, a little more in the outside frames than in the center ones. They are crowding the queen, so much so that the colony is apparently weakening. They go up into the super (at least a few of them), but do not seem to do any work up there, and seem to be almost at a standstill. The last two years we have had a light honey-flow, which lasts all summer. Now what would you advise doing, to get the bees to put the honey into the supers, out of those frames?

There is honey-dew on the box-elders here, but the bees do not seem to care for it. I have not seen them work on it yet.

R. R.

Ogden, Utah, July 5.

ANSWER.—It's possible the flow isn't enough to make them feel they can afford to store in supers. Scratching the cap-pings in the brood-nest may help. Perhaps the best thing is to put by way of bait in the super some drawn-out comb, or a piece of comb with brood in. If they don't store then, it's because there isn't enough to store.

An Experience with Bees—Swarming.

In the spring of 1891 I got the bee-fever, or honey-fever, rather, and decided to buy one colony of bees, just to get some honey to eat, and my wife told me that it would be money thrown away to buy bees and not know how to take care of them. I told her I did not expect to do anything with them, only if they should store some honey I could get Mr. Alexander to take it off for me, and we would have some to eat as we wanted it. On June 6 I bought a new swarm of one of my neighbors; they did not swarm again that year, but the next year they did, and I got a neighbor to come and hive them for me, and that made me two. Then I longed to know how. I subscribed for *Gleanings*, and ordered "A B C of Bee-Culture," read everything I could get about bees, and talked with every man that would talk about bees, and told him all I had read, and all I had learned. I now take the *American Bee Journal*, which I find the most instructive of anything I have found, besides my "A B C of Bee-Culture."

In 1894 I found one colony queenless, and sent to Texas for a golden Italian queen, which I introduced by Mr. Doolittle's plan, with success, and that summer I reared several queens from her, and last fall I ordered leather-colored Italians from Ohio, and put into winter-cases 26 colonies packed with cut corn-stalks. On opening up this spring, I found my Texas queen and bees, and one of her young queens and bees,

all dead, that being the first and only winter loss I have had. I clip my queens, and after they swarm I move the old hive to a new stand, and after a few days cut out all but one queen-cell, and I am not bothered with any second swarms, or haven't been for the past two years, but before that they swarmed all the time.

I use in the brood-frames heavy foundation, some small and some large, but in the sections full sheets. I have had but two swarms this spring, and they came out on Decoration Day, and the next day I looked both old colonies over to see about their preparing to swarm; I failed in both to find the least signs of a queen-cell. The reason I was anxious to look was this: By reading, or talking with people, I would hear them say, "If the weather keeps warm like this a day or so, we will get some swarms." Or, "If honey continues to come in a few days, we can look for swarms." Yet it is said, too, that bees always prepare before hand. Also, we hear it said that sometimes when a swarm comes out it excites others, and they come out, and several would be in the air at the same time. The question is, Had they prepared? Were they ready for the excitement? The thought came to me, "How much preparing is wasted in changeable weather? I would think they would get discouraged, and hardly know what to do;" and on looking it satisfied me that they some times take a sudden start.

1. Now for a question: If Nos. 1, 2 and 3 should swarm out at the same time, and cluster together, with Nos. 1 and 2 with clipped queens, No. 3 with a laying queen or virgin, will Nos. 1 and 2 go back to their own hive? If not, what is the best thing to do?

2. I have read a great deal about how to prevent swarming, and have given it considerable thought, but not any practice, and have decided this: About apple-blossom take one, two or more of the best queens (according to the number of colonies), and kill, sell, or give away, and as soon as those colonies have a good supply of queen-cells, all sealed, go to the other colonies and take out those queens and give them a good cell in a queen-cell protector, and by the time she is hatched the bees will be glad to receive her. What do you think of that plan?

J. W. P.

S. Onondaga, N. Y., June 29.

ANSWERS.—1. The probability is that the bees of Nos. 1 and 2 will remain with the swarm that came from No. 3, and do just whatever the swarm from No. 3 would have done if it had been left entirely alone. The easiest thing would be to have them all together, and perhaps that might be the best thing if the swarms were not too large, but it must be remembered that such mammoth swarms will not remain so large, and by fall will be no larger than if only a third of the bees had been with the queen in the first place. If you don't want all of the bees to remain with the swarm, you can return some to the parent colonies, or you can divide the bees into two lots, hive them separately, and furnish a queen to the queenless part.

2. In the first place, is it a good plan to pick out your best queens and sell, kill, or give them away? Why not make a nucleus and save your best queen? But that has nothing to do with the real gist of your question. I think your plan would work all right in some cases, and in others the bees would swarm just as soon as the young queen was old enough; that is, within a day or two after leaving the cell. But it might be worth while to try, and if you do try the plan I wish you would report what success you have.

Swarming Not Wanted—Eight-Frame Hive.

1. I have a swarm of Italian bees that I divided, and then sent to New York and got a queen about one month ago. After I introduced the queen, perhaps three or four days, a swarm came out. The queen's wing was clipped, and they came back and went into the same hive. I thought to-day I would put in another frame of foundation. After I opened the hive, I thought I would look and see if there was much brood; I did not find much, but found 12 or 15 queen-cells. I cut them out, for I did not want them to swarm again. On one of them I found two young queens, but did not see the one I put in. I took one out, and left the other in the hive. Now what do you think has become of the old queen? Why didn't the queens tear down the cells? Do you think there were three queens with all of the cells? Did I do right? If not, please tell me what you would have done.

I put the old queen with the new colony, and they are doing splendidly. They have just commenced to work in the sections.

2. I have 8-frame hives, with seven frames in each.

Would you put in the other now, or wait a little while longer?
Danbury, Conn. W. N. D.

ANSWERS.—1. If I understand you correctly, the bees swarmed and returned, and after some days you found two young queens and a number of queen-cells, and the old queen gone. That's just what you might expect to find nearly always. When bees swarm, or try to swarm, and the old queen cannot go with them, the maturing of the young queens in the cells goes right along just as though the old queen had left, and when a young queen emerges the old queen is put out of the way. I don't know anything better you could do than you did, merely to destroy any cells and leave only one queen in the hive. I'm not sure, however, that the result would have been any different if you had left them entirely alone, for if the bees had intended to swarm they would hardly have allowed the second young queen to emerge until the first was safely out of the hive.

2. There isn't much difference between 7 and 8 frames, and I don't suppose it makes much difference when the eighth frame is put in, but it's safe for the colony to have it put in very soon.

Nucleus Tearing Down Queen-Cells.

Why does a nucleus that I made tear down not only the queen-cells that I inserted on one frame, but very often the queen-cells that I gave with the frame. After that, although queenless, the bees stored some honey, but do not feed the brood in the same frames. I never saw such a thing in Italy.

Here the bees are beginning to store some surplus honey, now that the alfalfa is in blossom. I made some nuclei, but I had much difficulty to save them, because before the alfalfa there were no flowers in the fields, and the robbers were very bad. Now that there are no more robbers, the bees tear the queen-cells down. What for?

S. A.

Beowawe, Nev.

ANSWER.—Without knowing more particularly about it, it is hard to tell why the bees tear down your queen-cells. It is possible that the cells were given too soon after the bees were separated from their queen. You know that bees that have no desire to swarm will tear down queen-cells as fast as you give them, so long as they have a queen. Now when you form a nucleus, if you give them cells as soon as the nucleus is formed, they have not yet discovered their queenlessness, and will tear down cells just the same as though the queen were yet present. If this be not the trouble, I don't know what it can be, except that bees are very freaky and will sometimes do all sorts of unreasonable things. If I am correct in my surmise, then the right thing is to wait perhaps 24 hours after forming your nucleus before giving queen-cells.

Didn't Swarm After All.

1. What is the matter with my bees? I have practiced dividing this spring with half of my colonies, and I left the remaining colonies to swarm naturally. On examining some of them I found sealed queen-cells, and some not yet sealed, and the old queen laying right along, but they never swarmed, and from the fifth day to the seventh after the first was sealed, I would find young queens lying out on the ground in front of the entrance dead. They had been cut out for some cause or other—I know not what for. One thing I do know, that is, the young queens were gnawed out of the cells and dragged out of the hive. The indication was, as far as I could tell, that they were going to swarm, but they never did. The colonies were not queenless, for I examined closely, and found the old queens. This was the case with all of those colonies that I left to swarm naturally. Can you give me any information on this?

2. Which do you think did the work, the old queen or the bees?

J. M. J.

Pike, Tex., June 29.

ANSWERS.—1. It is nothing so very unusual for bees to make preparation for swarming and then change their minds and give it up. Especially is this the case if the weather is very unfavorable, or if pasturage is scarce.

2. I think the workers did the work of destruction.

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Editorial Budget.

The Annual Report of the convention of the Ontario Bee-Keepers' Association held at Stratford, Ont., last January, is on my desk. It is a 64-page pamphlet, and gives the proceedings in full. It is an interesting publication, and should be in the hands of every Canadian bee-keeper, at least. It can be had free by addressing the Honorable Minister of Agriculture, Toronto, Ont. The list of members, as given in the annual report, shows exactly 176. Pretty good!

Dr. O. S. Brown, of Londonderry, Ohio, at the recent meeting of the Ohio State Board of Agriculture, was selected as expert judge of bees, honey, apiarian supplies, maple products, etc., to serve during the Ohio State Fair at Columbus, Sept. 2 to 6, inclusive. Dr. Brown was present at the World's Fair convention of the North American, where I had the pleasure of meeting him and his wife. The bee-keepers of Ohio should make a good display, if possible, at the State Fair, and thus give the apiarian judge a good chance to show what he can do in the position to which he has been appointed.

The Premium and Clubbing Offers published in the Bee Journal are fairly clear, I think. Please read them carefully, and then do not ask or expect anything more than is offered. For instance, the premium book "Bees and Honey," is now given to a new subscriber *only* when he or she sends the full \$1.00 for the Bee Journal. Understand, please, that hereafter only *one* premium is given for sending a new subscriber. Please read the premium offers carefully, and then no misunderstandings will arise.

Orange Blossom Honey is reported in Gleanings, by Rambler, who says that Mr. G. K. Hubbard, of Riverside, Calif., has produced over a ton of the article. He also says, "There is no slipshod management about Mr. Hubbard's apiary, and a few more such expert bee-keepers would have a marked influence upon the value of our products in the markets."

That's a tally for Indiana, for Mr. Hubbard removed from Ft. Wayne on account of his wife's ill-health. If his wife has better health in California, and he has the best honey, I don't see any reason for complaining in that household. Health and honey ought to go well together. And 'tis said they have lots of the former (health) in many parts of the Golden State, and much of the latter (honey) quite often.

Bees and Grapes.—It has often been insisted upon by those who are not better informed on the subject, that bees injure grapes. I happened to run across two testimonies on the subject, which are given here for the benefit of those who may have occasion to need something of the kind in order to effectually answer any complainants.

The following item is from the Country Gentleman—a well-known country weekly, published at Albany, N. Y., evidently a reply to an inquiry upon the subject:

G. T. G. must be mistaken about the bees injuring his grapes, or he has a different race of bees from mine. I have three kinds, 50 colonies in all, placed between the grape-rows. The grapes have never been injured in the least by them. A neighbor has 120 colonies of bees also between the rows of grapes. I know the grapes have been perfect, for I have bought and sold them for five years for first-class grapes for hotel-table use. If G. T. G. will look at his grapes, he will probably find three-cornered punctures, with a piece of skin pressed in. If so, it is the work of birds. After the skin is broken the bees will take the juice, but not before. The experiment has been tried of putting a colony of bees in a greenhouse graperly without food. The bees did not break a single grape, but died for want of food. It is a mistaken idea of bees puncturing grapes; I think bees and grapes go well together. The neighbor of whom I spoke is a widow 50 years of age. She has sold as high as \$800 worth of grapes and honey from three acres of land occupied by the bees and grapes.

Onondaga Co., N. Y.

CHAS. MILLS.

The other item was found in the Montreal Witness, and reads thus:

An enquirer some time ago wished to know if bees were injurious to grapes. In confirmation of the negative reply then given, the following testimony is to the point:

We have had grapes and bees for 15 years, and never had the former injured by the latter, or even seen bees on the grapes with the exception of two years. On these two occasions a strange flock of orchard orioles visited my vineyard and destroyed nearly all my Brighton, and some Jeffersons. After these birds had cut the skins with their sharp bills, the bees flocked to the grapes and sucked their juices but those two years, and other years I never saw bees on grapes that had not first been skin-broken.

There is no proof extant that bees ever injure sound grapes, or that they are able to do so.

Such direct testimony should count for much, and help to silence the assertions that bees do destroy grapes. They only help themselves after the grapes have been first punctured by some bird or other insect.

The "10 Weeks for 10 Cents" Offer to new subscribers was withdrawn July 15, as advertised. To any received after that date, 10 back numbers of this year's Bee Journal have been sent, and we will renew the offer of "10 cents for 10 weeks" (or 10 back numbers) so long as our stock of back numbers of 1895 holds out. So, to any one sending 10 cents, we will mail 10 different back numbers, all to be since Jan. 1, 1895. Ten of such numbers are just as good for getting a fair idea of what the Bee Journal is, as would be 10 future numbers. The 10 back numbers will all be of different dates, but will not be consecutive numbers.

The W. T. Falconer Mfg. Co., of Jamestown, N. Y., large dealers in bee-keepers' supplies, say this in the July American Bee-Keeper, in reference to the business they have done this year:

Taking it altogether, we have done a much better business than for several past seasons, although the late frosts, followed by extremely dry weather, caused trade to stop very suddenly about the middle of June.

The Amalgamation of the North American and the Bee-Keepers' Union is favored by Gleanings also. So far as I have seen, all the bee-editors are in favor of it. If the amalgamation is effected, certain bee-periodicals will surely push for a large membership in the united society.

Canadian Beedom.

Preparation of Bees for Winter.

It is not any too early in this part of the world to begin planning and arranging for next winter. Whether the bees are to be wintered in the cellar or on the summer stands, the first and most important matter to be looked after is the supply of stores. Whenever there is feeding to be done, it should be done early. Generally speaking, the advice is to feed during the month of September. I feel sure that this is not good advice. Even though the weather is warm enough to admit of the bees accepting and storing what is fed to them, be it honey or sugar syrup, one very important advantage of feeding is lost by deferring so late, and that is the rearing of brood well into the fall. Bees are more provident and sagacious in this matter than human beings. They will not go on and rear a lot of young if the food-supply is short. So in order that a colony may go into winter quarters strong in young bees, feeding must be done early enough for brood to be reared and matured in vigor before the advent of cold weather. Even when September is a good feeding month, there is not time for a force of workers to be properly nurtured before chilly weather begins to induce the semi-torpor which is the first stage of the bees' own preparation for winter.

Dr. Gallup is quite right in saying on this point (page 438) that if September is a good working month only a few of the bees reared in August will be alive the end of April. This applies to localities further south, where there is a good fall flow of honey, but there are few sections in Canada where there is any appreciable honey harvest in the fall of the year. Practically, the honey season is over with us by the end of July. There are a few localities, where buckwheat is raised, in which this remark does not hold good. But, for the most part, honey-gathering ceases by the end of July. On the failure of out-door supplies the bees intimate in some way to the queen that there must be no more increase in the family, and gradually egg-laying comes to a stop. If the hive is well stocked both with brood and stores, there is a subsidence of activity and a cessation of brood-rearing. By the middle or end of August all the young brood is matured and in full strength, having had enough field exercise to develop, without wearing out their normal powers of flight and work. Then as the nights begin to get chilly, and bad weather occasionally prevails, the bees become quiet, glide into inaction, and compose themselves for their long sleep, if sleep it be, or for that condition of wakeful lethargy which is favorable for wintering in the best possible manner. If this is a correct statement of the case for Canadian beedom, it follows that September is too late for feeding to be done to the best advantage.

I would rather counsel bee-keepers to ascertain the condition of their colonies as to winter stores at the close of their honey season, whenever that is, and do their feeding forthwith. I am inclined to think that the fierce and eager craving for stores which leads to bees pestering housekeepers in fruit-preserving time arises from a sense of the food-supply being insufficient, and is really a frantic and desperate effort to make up the deficiency of which they are conscious. During the honey season, when there is a copious flow of nectar, housekeepers are not thus annoyed. So of robbing. There is none of it when there is plenty of nectar throughout "all outdoors." Bees are less inclined to rob when feeding is put off until September. So also are they less likely to take down and store syrup. It is very easy to institute precautions against robbing, by feeding only in the evening, and using wire-cloth at the entrances of the hives to give ventilation without leaving more than a single bee-space or so during the daytime. It is every way better to feed early, thus calming the anxiety of the bees for more stores, and giving the bee-keeper the satisfaction of knowing, in good time, that his bees are "ready, aye ready" for their winter ordeal.

There will be a large amount of feeding required the present season if bees are to be preserved alive. It is the height of cruelty to let any colonies die of hunger. If a bee-keeper has more colonies than he can afford to feed, he should select as many of the best as he can support in comfort, and sulphur the rest. Suffocation with brimstone is an easy method of dying. The bees are gradually stupefied into a sleep that knows no waking. But death by starvation is a barbarity from which every humane mind shrinks. I do not believe with Cowper, that the poor beetle we tread upon,

"in corporeal suffering feels as great a pang
As when a giant dies."

Neither do I think that it is as horrible a thing for a bee to starve to death as it is for a human being to suffer that fate, but if a colony cannot be fed and kept in comfort, by all means let it be brimstoned forthwith and put out of its misery.

I make the suggestion for what it is worth, that it might be well for those who have more colonies than they can afford to feed, to advertise them at cheap rates, explaining to buyers that they will need feeding, that they have only stores enough to last a little while, but that they may be readily fed up so as to winter safely, and come out in strong condition next spring. At the present low price of sugar, it will pay one who wishes to get cheaply into bee-keeping, to buy some weak colonies and feed them up, say at a dollar per colony. Of course it would be better for the bee-keeper himself to spend that much in prolonging the lives of his bees, if he can find a way of doing it.

UPWARD VENTILATION AND SEALED COVERS.

I shall only add at this time a few words on upward ventilation and sealed covers. I do not pin my faith absolutely to either. A very small amount of upward ventilation appears to be quite harmless and perhaps beneficial. But much of it makes the bees more or less uneasy, increases the consumption of food and adds to the accumulation of feces. Sealed covers, on the other hand, lead to condensation of moisture to such an extent that it often drips from the entrance, if the floor of the hive inclines outward, or accumulates on the bottom-board, if the inclination is the other way. If sharp, freezing weather comes when this moist condition of things exists, the walls of the hive, outer combs and floor will become icy, giving the bees chilling surroundings, that cannot but be most detrimental to them. I have settled down for my own part on using a woolen blanket or carpet cover, and on top of it porous and absorbent material, such as old newspapers and pamphlets, or sawdust, chaff, cut straw and forest leaves. The woolen material next the bees conveys the moisture to the other side of the piece of blanket or carpet, where contact with the absorbent material causes it to pass upward, so rendering it harmless to the bees. I suppose there is the slightest possible upward ventilation, a sort of slow percolation of air and moisture, but it works well, provided the entrance of the hive is not too narrow and contracted.

Southern Department.

CONDUCTED BY

DR. J. P. H. BROWN, AUGUSTA, GA.

[Please send all questions relating to bee-keeping in the South direct to Dr. Brown, and he will answer in this department.—ED.]

The Uphills and Downhills in Bee-Keeping.

DEAR DR. BROWN:—Through the American Bee Journal you may take the idea that I am a Texas bee-man. You may be right, as I keep about 100 colonies, more or less. The number changes like the fall and rise of the hygrometer; from 100 it may fall to 80, from 80 to 120, but with not much honey, nearly at all seasons. You may see by this that my method of keeping bees is *sui generis*. You would naturally ask: "By the heavens, what is the matter?" As a christian gentleman the inquiry would be well put; for they are heavenly influences (say nothing of a personal character) that make the bee-business with me a financial failure. This heavenly blight is the aridity of our climate; not only in the bee-business, but of nearly all others except the onerous tax business, and the land business, that periodically prospers here on the patronage of foreign "fools."

I keep bees because I love them, and often make them instrumental to all sorts of experiments. My experience in the bee-line is prodigious, and I believe I could tell you more about apiarian failures than any one in the fraternity. My present stock is from three colonies; but in a land of the living I should be monarch of a thousand queens, with at least two billions working subjects to increase the store of my wealth.

In the *debut* of my bee-enterprise I expended money liberally on it; and to look at the systematic array of my hives, nicely painted, and artistically numbered, nestled within a cool (?) grove, the sight is one to excite admiration. My apiary is really a bower of delight; but not profitable, and to tread with peaceful intentions among a hundred queens, each guarded by a terrible army of many thousand, is the "sweet

emotion of bravery" I daily enjoy. But as to their present management—with old age stealing on me, taking nearly all physical vigor out of me, except in spirit, that refuses in its exuberance to march hand in hand with waning age, I necessarily instituted a new system of bee-keeping; that is, I keep them, and not much more, I cease to feed them, no longer give them foundation, let them enjoy the heat of the summer, and the cold in the winter *ad libitum*, freely divide my swarms to the glory of the forest. But I neglect them not *in toto*. To maintain them in a good condition, I allow them double the ration they need, and so practicable I am, that at times I pile up a stack of stories, to keep them at work, to prevent swarming, to make colonies strong, and to effect them to kill the moth themselves. The whole affair is a sort of a self-acting and self-sustaining arrangement, with only now and then a touch of a master's hand—for the sake of an apian respectability, for I have a horror of slovenliness.

In referring to some of the back numbers of the Bee Journal, you will find on record some of my bee-inventions, a few of which I have materially improved, and will bear further notice. In the issue of Dec. 5, and Aug. 8, 1888, the rack holding my smoker is now permanently fastened to a gallon tin paint-can, and, in using it, it is simply hooked to the side of the hive, in a manner so that the current of air will draw the smoke over the top of it. The arrangement is very efficient. It gives no excess of smoke, the bees are promptly driven down; there is no dust, ashes and soot that will soil the honey, and, what is of special value, it is automatic, and gives free use of both hands. I have used no other smoker since 1888, and wish nothing better; and as to the cost of making it, we might call it the "dime smoker." To regulate the ignition, use a tin cover with a wooden handle. In a dead calm of air, I at times use this cover to fan the smoke over the hive; and for preliminary smoking at the entrance, if the air is not propitious, I give a few whiffs of smoke with the fan. Let me privately tell you, if the bee-fraternity knew the merits of this smoker, they would discard all others.

I likewise, in the same number of the Bee Journal, gave my method to keep the frames of hives a proper distance apart; by driving wire nails into each end of the frame from the outside. It is a very efficient plan, but it requires too much tinkering; and now I simply use the two-pointed carpet-tacks. They are of the right size, and when once placed between the frames, will require no further attention. I have to say with a heartfelt gratitude: Blessed the man that invented the two-pointed tacks!

With this communication I will send you a paper where the press herald me as a "great inventor." I admit the subject, but protest against the adjective. But I will say, of many of my inventions, confined in the different departments of science, there are some that don't give me near the satisfaction that I feel in the two very simple ones mentioned above. Often an invention is valuable, where efficient effects are brought about by simple means. Yours truly,
Austin, Tex. G. P. HACHENBERG, M. D.

Among the Bee-Papers

AMOUNT GATHERED BY BEES IN A DAY.

According to the observations of Schachinger, a Hungarian priest, when 20,000 bees gather in a day 8.83 ounces of honey, 30,000 bees gather three times, 40,000 eight times, and 50,000 twelve times as much. The data of these observations are not given.—Review.

EFFECT OF TEMPERATURE ON BEES IN WINTER.

That is a suggestive thought on wintering which Dr. Miller brings out in Gleanings. When the air in our living-rooms is very impure from lack of ventilation we shiver at 70°; but when the air is perfectly pure and crisp we feel warm at 65°. This is very probably one reason why zero harms out-door bees less than 32° harms cellar bees.—E. E. Hasty, in Review.

ARTIFICIAL INCUBATION OF QUEEN-CELLS.

The subject of artificial incubation of queen-cells is very old. Under the heading of "Lamp Nursery," in the old editions of our "A B C" book, away back in 1878-79, there are full particulars on this subject; but there are very few queen-breeders, if any, who now use artificial heat for hatching cells. What are known as "hatchers"—a series of queen-cages put down between the frames, or on top of them, over a

powerful colony—is preferred. These little cages contain a single cell; and the heat arising from the cluster is sufficient to hatch them. Of course, the natural heat of the colony is far superior, more regular, and better in every way, than anything that can be supplied by artificial means.—Gleanings.

CRIMSON CLOVER AS A HONEY-PLANT.

Crimson clover, sown the middle of August on the writer's experiment plot, commenced blooming the first of May and ripened its seed early in June. For four weeks the honey-bees hummed joyously over its beautiful blossoms. Wherever it can be grown, crimson clover is a honey-plant of great value. It is the first of all the clovers to bloom. Where the bee-keeper has white clover or Alsike clover, he can add one month, at least, to the length of the honey harvest by a field of crimson clover.—Farm and Fireside.

GETTING RID OF ANTS.

To get rid of the small ants, find their nest if possible. Make a hole through the center of the nest with a crowbar, and pour in about half an ounce of bisulphide of carbon, which you can get at your drug-store. Quickly cover the hole and it will destroy the nest, ants and all, but it will not kill vegetation. If you cannot find the nest, put a little molasses on a board, poisoned with strychnine, or some other poison. Put this in a place where only the ants themselves can get at the sweet. This will kill them as they make their visits; but of course the better way is to get at their nests.—Gleanings.

DAMPENING SECTIONS FOR FOLDING.

Sections, from being kept in a dry place, become so brittle that many of them break in folding. The best remedy is to put them in a damp cellar a few days before folding them. If there is not time for this the usual practice is to wet the grooves. S. E. Miller, in the Progressive condemns this plan, as it causes the sides of the grooves to swell, thus increasing the strain on the part that bends. He recommends the laying of a dozen or more sections on a table, the grooves being turned down, then with clear water and a small brush wet them just back of the grooves. The sections can then be piled up and another lot laid down and wet. My remedy would be to use four-piece sections.—Review.

CERESIN FOUNDATION.

It is generally supposed that this country is at the head in matters of adulteration, but I doubt whether any firm in this country makes a practice of manufacturing foundation from anything but genuine beeswax, and certainly they would not advertise foundation of any other kind. Here's something from Karl Mathey, in Gleanings:

I reproduce the following, simply to show that foundation made from ceresin is publicly sold in Germany:

"The undersigned firm offer ceresin foundation in their price-list, together with that made from pure wax, on the following grounds:

"1. The amount of beeswax produced, when compared with that of honey, is very insignificant, being scarcely 5 per cent. of the latter.

"2. The cheaper foundation made of ceresin, whether the extractor be used or not, and be the honey harvest never so good, is decidedly conducive to an increase in the net amount of honey produced as compared with the use of foundation made from pure beeswax.

"3. The price of beeswax must fall more and more—that is, come nearer to that of ceresin, and that is only a question of time—or else the use of ceresin and other kinds of wax will become more and more common. But if it does become cheaper, then the use of ceresin for foundation will be discontinued.

"4. No man, either officer of the law or a private citizen, can control or hinder any one of the thousands of bee-keepers of Austro-Hungary in the use of ceresin foundation, whenever and wherever he pleases, whether it be made by means of a plaster-Paris or wax mold." BARON ROTHSCHUETZ.
Weixelburg, Austria.

The McEvoy Foul Brood Treatment is given in Dr. Howard's pamphlet on "Foul Brood; Its Natural History and Rational Treatment." It is the latest publication on the subject, and should be in the hands of every bee-keeper. Price, 25 cents; or clubbed with the Bee Journal for one year—both for \$1.10.

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(In four parts.)



PART 1—"By jove, this must be the very place where Miss Constance said she would leave the message that would seal my fate."



PART 2—"Ah, yes; I can identify the tree by the characters upon it. The letter must be inside."



PART 3—"To be or not to be?—that is the question."

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Convention Notices.

CALIFORNIA.—The next meeting of the Tulare County Bee-Keepers' Association will be held in Visalia, Aug. 14, 1895. All interested are invited. J. E. YOUNG, Sec. Visalia, Calif.

TEXAS.—The Texas State Bee-Keepers' Association will meet at Greenville, Tex., Aug. 21 and 22, 1895. Good premiums are offered for best exhibits. All are invited to attend. Depart, Tex. W. H. WHITE, Sec.

ILLINOIS.—The annual meeting of the Northern Illinois Bee-Keepers' Association will be held at the residence of O. Taylor, in Harlem, Ill., on Tuesday, Aug. 20, 1895. All are cordially invited. B. KENNEDY, Sec. New Milford, Ill.

TENNESSEE.—The next annual meeting of the East Tennessee Bee-Keepers' Association will be held at Mulberry Gap, Tenn., on August 16, 1895. The members are urged to attend and all bee-keepers are invited to be present. H. F. COLEMAN, Sec. Sneedville, Tenn.

WISCONSIN.—The Southwestern Wisconsin Bee-Keepers' Association will hold its next meeting at Platteville, Wis., Oct. 8 and 9, 1895. "Come, every one." Don't get discouraged if we haven't got a crop of honey. We will have a good time at Platteville, just the same. Bring your wives and daughters with you. Many interesting subjects will be discussed. M. M. RICE, Sec. Boscobel, Wis.

Wants or Exchanges.

This department is only for your "Wants" or bona-fide "Exchanges," and such will be inserted here at **10 cents a line** for each time, when specially ordered into this department. Exchanges for cash or for price-lists, or notices offering articles for sale, will not be inserted here—such belong in the regular advertising columns, at regular rates.

TO EXCHANGE.—Bees and Queens for an Organ. F. C. MORROW, 274th Wallaceburg, Ark.

TO EXCHANGE.—Lossing's "Civil War in America" (3 vols.), for Honey. Address, J. C. YORK, Alliance, Ohio.

Market Garden.—The June number of the "Market Garden," published by the Market Garden Co., Minneapolis, Minn., is a special number on the construction of vegetable greenhouses. Anyone interested in this industry may have a sample copy free by mentioning this paper.

North American Bee-Keepers' Association

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VICE-PRES.—L. D. Stilson.....York, Nebr.
SECRETARY.—W. Z. Hutchinson...Flint, Mich.
TREASURER.—J. T. Calvert.....Medina, Ohio.

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PART 4—!!!!!! [—New York Herald.]

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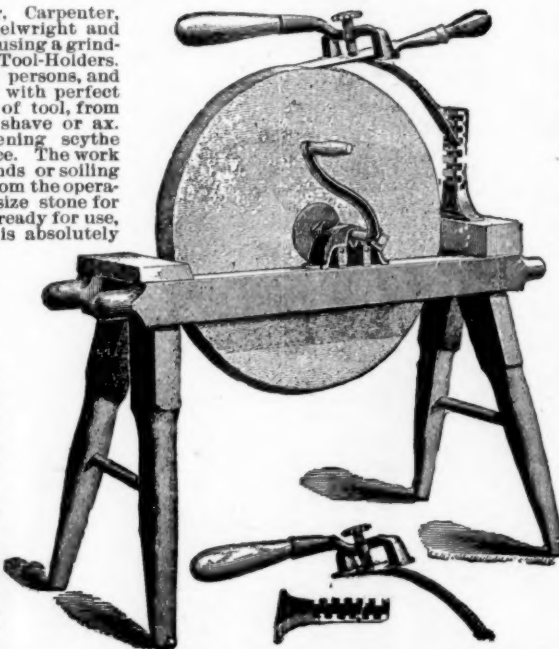
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DIRECTIONS.—The Tool is fastened securely in the Holder by a set-screw and can be ground to any desired bevel by inserting the arm of the Holder into a higher or lower notch of the standard. While turning the crank with the right hand, the left rests on an steady the Holder; the Tool is moved to the right or left across the stone, or examined while grinding, as readily and in the same way as if held in the hands.

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General Items.

Small Nails for Spacing Frames.

I think the idea is a good one, to hold the frames in position a certain distance apart in the hive ready to receive the new colony of bees. I only put nails in the top-bars, thinking that nails in the bottom-bars might injure the sides of the combs if I wished to take out a central frame.

I use a plumb-bob device to level the ground, or coal cinders, before putting the hive on the spot I want it to occupy in the apiary, and by having the frames hang as perpendicularly as possible in the hive, it will do away with nails in the bottom-bars.

I had several hives ready waiting for colonies to swarm, and I took two of them and put nails in the top-bars at once, and will overhaul all of them fast as I may want them.

Clintonville, Ohio.

T. N. Con.

The Season in West Virginia.

We are having quite a drouth here, and it is cutting our honey crop short. Our white clover is almost a failure. The sour-gum and sumac are just beginning to bloom, which are good honey-plants. Buck-wheat bloom is very good for bees, but there is not much raised in this locality. I want to sow some if rain comes soon. Some of my neighbors who keep bees say theirs are doing well at this time, but if it does not rain soon it will be hard on them next winter, unless they are fed. I have increased from 8 to 12 colonies by making nuclei. I do not let my bees swarm, but will not divide any more this season. I commenced with one colony two years ago and have been successful, and have not had to feed very much, but what I do feed, I do it when there is plenty for the bees to work on, so I am never bothered with robbers.

The American Bee Journal is welcomed at my home every Friday evening. My neighbor, C. C. Harter, is going into the bee-business pretty extensively. He has close to 40 colonies, and keeps nothing but pure golden Italian bees.

S. L. DELANEY.

St. Leo, W. Va., June 23.

Heavy Loss in Winter, Etc.

Out of 7 colonies put into the cellar in good condition last fall, I took out 4 weak ones this spring, and they dwindled to 0, so I am out of the business. But I am not alone; bees dwindled badly in this locality. I think fully 60 per cent. of the colonies died between Dec. 1 and May 1, and the rest are mostly weak. Well, it is probably all for the best, as we shall have no surplus without it is from fall bloom. The frosts the last of May killed the basswood buds, and the drouth has ruined the white clover, so that bees are living partly on their stores now.

I wish to say to Mr. E. S. Lovsey, through the American Bee Journal (as others may feel interested in the welfare of honey-yielding plants as well), that of the seeds he sent me I got a good stand of alfalfa and sweet clover, but did not get a single plant of Rocky Mountain bee-plant, though I tried several ways. The alfalfa looks well now, although it is on clay soil which froze 6 feet deep last winter, and we have scarcely any rain this summer. The ground was frozen when the snow left, and I do not remember any rains to amount to anything except on May 30 and June 21.

I could not well keep bees without the American Bee Journal. J. H. DYSON.
Belleville, Wis., June 26.

A New "Bee-Killer."

Some time ago Dr. Miller and Mr. Doolittle indulged in a discussion in one of the bee-papers upon the merits of their respective paddles for killing scolding bees. I

SPECIAL NOTICE

For July and August only. To those who never tried our strain of **Honey-Gathering Italians** we will send one Sample Queen for the trifling sum of 50 cts. One Queen only will be sent at above price to one address. All Queens Warranted Purely Mated. All Queens sent by return mail, weather permitting.

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I am now practically isolated from other bees and am mating all Queens to very large yellow drones from a colony that wintered successfully on summer stand; also gave a large yield of comb honey last season. Queens not related to drones. I can ship by return mail, and guarantee safe arrival. If you want the best Queens send your orders to **JAS. F. WOOD,** the QUEEN SPECIALIST—price 75 cts. each. Address, J. F. WOOD.

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30A2t Mention the American Bee Journal.

think one used a wooden paddle and the other a paddle made of wire. I am not sure which came out ahead—I am too busy taking off honey to look it up—but I believe Dr. Miller was on the fence! I send herewith a picture of a paddle I have been using this season, and will tell the readers of the "Old Reliable" how it is made. It combines the lightness and rigidity of the Miller paddle with the swiftness and destructiveness of the Doolittle, and is better than either of them.

Take a shingle about three inches wide—as it is the fashion to use old things for tools for the apiary, I would say, take an old shingle—and shave the heavy end down to a convenient handle. With a sharp knife cut a few holes in the other end to let the air pass through when striking at a bee. If the holes are made too large the bee will also pass through and come around and sting the apiarist on the back of the neck. If the paddle is made just right, the yard can be cleared of scolders in a very few minutes. In the hands of an expert it never fails to draw a scolding bee into the vortex.

The handle may be studded with diamonds, if the bee-keeper has an eye for the beautiful! **GEO. W. STEPHENS.**

Denison, Iowa.

Cold and Drouth—Kingbirds.

I have 13 colonies of bees. One colony died last winter, and one this spring. I have had four swarms. Frost, freeze, and drouth almost destroyed the fruit-blossoms, and white clover honey in this section.

I differ from Mrs. Mate Williams about the "kingbird." She says: "It does not eat them (the bees), but pinches the honey out of them." I have shot numbers of them, and always dissected them, invariably finding from 10 to 24 bees in their crops.

W. R. WHITNEY.

Phillipsburg, Pa., June 27.

New Use for a Telephone, Etc.

I have 17 colonies of bees which I run in connection with a small farm, and I have to leave the bees for my wife to watch in the time of swarming. I have a telephone line running over my apiary to one of my neighbors, and when the bees swarm they keep up such a racket by bumping against the wire that they can be heard anywhere in our three rooms, and also at our neighbor's at the other end of the line—60 rods away. If any of your readers doubt this statement, please try it.

It is a very poor season so far here for honey. I have only 4 or 5 colonies that are storing any surplus. Basswood is in bloom, but I do not think the bees gather any honey from it. Motherwort, catnip and mustard are the only honey-plants they work on now. We have having the worst spring drouth that was ever known in southern Michigan.

S. A. RAYMOND.

Bonney, Mich., July 3.

The Season—Spring Feeding.

As basswood has just bloomed its last for this year in this locality, I thought I would give my experience. Last year the season was extremely dry, and we got no surplus honey to speak of, but last fall the white clover got such a start that I felt sure of a good honey year in 1895, and so it proved, for of all the springs I ever saw, the past was the most beautiful, but only for a season, for in the midst of its glory came the ten days of frost and cold winds, that put everything back, and destroyed the fruit so that instead of swarming as the bees intended, they had to stay in their hives and use up what they had gathered in the sunshine. But next to the frost came dry weather, which dried up the clovers, withering the blooms and preventing more from appearing, so in May, when we should have heard the happy hum that proves that honey is coming in, our bees were disheartened and staid in the hives.

To go back a little: On April 11 there

appeared Mr. C. Davenport's valuable article on spring feeding, which impressed me as of great value. I read it carefully, but feared to follow its teachings, lest I should not only lose a crop of honey, but lose money and time in feeding sugar; but day by day, as the dry weather continued, I felt something must be done, so I got 100 pounds of sugar, and commenced to feed in jelly-glass feeders in the supers, all the colonies that were not strong, and a few that were, so that brood-rearing was not interfered with. (I can assure you I got no encouragement in the house to throw away my good sugar on the lazy bees.)

About June 20, basswood began to bloom (we have not as much as in the past, for the timber is fast disappearing), and the bees, to get a move on them, after they had worked a day or two, I took away a weak colony that was beside a strong one, causing the working bees to put their honey in the strong one; it seemed to work so well that I did the same with others, getting a few very strong colonies, and obliging them to store honey for me in the supers. It also gave me a lot of weak colonies that are doing nothing. At the end of 10 days the basswood honey-flow was over, and I have a nice lot of partly-filled sections, but none completed. Now comes the lesson: If instead of feeding 100 pounds of sugar, at 5 cents per pound, to the weak colonies, I had fed 3 or 4 hundred pounds, and caused the bees to almost fill the brood-nest with sugar syrup, they would, at the beginning of the basswood honey-flow, have gone above and stored three times the value of the sugar in nice honey. I feel sure Mr. Davenport has the right idea, for a locality and a season like this. Now, so far as we can see, there will be nothing for the bees to gather this year but what they have got at the side of the roads and fence corners.

E. B. ELLIS.

Cooksville, Ill., July 4.

Old & Scarce Bee-Books

—FOR SALE—

Huber, \$3; Reaumur, \$6; Wildman, \$6; Butler, 1634, (Phonetic, rare), \$20; Pictorius, Latin, 1563, fine copy, \$5; Hill, 1608, \$5; Warder, 1749, \$5; Maxwell, fine and rare, 1747, \$7; Bonner, good, \$5; Mills, 1766, \$3; Thorley 1774, \$4; Keys, an able work, \$4; Howatson, excellent and rare, 1827, \$3; Bevan, valuable to all bee-keepers, 1827, \$4; Munn and Hunter, very rare, one book, \$3; Mackloskie, Covilland, Briant, one, \$2; DeGellieu, \$1.50; Shuckard, British Bees, \$4; Cotton, \$3; Jardine, Sir Wm., \$3; Nutt, \$3; Huish, 1842, \$3.

French Works — Della Rocca, 3 vols., \$6; Fratiere, has Prokopovitch's hive, \$2.

German Works — Shirach, 1789, a great work, \$5; Riem, extremely rare and valuable, Dresden, 1798, \$5.

These books are of great interest to all students of apiculture everywhere. Write for any work on Bees you want. U. S. money and stamps taken.

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Langstroth on the Honey-Bee, revised by Dadant.—This classic in bee-culture, has been entirely re-written, and is fully illustrated. It treats of everything relating to bees and bee-keeping. No apiarian library is complete without this standard work by Rev. L. L. Langstroth—the Father of American Bee-Culture. It has 520 pages; bound in cloth. Price, \$1.40.

Bee-Keepers' Guide, or Manual of the Apiary, by Prof. A. J. Cook, of the Michigan Agricultural College.—This book is not only instructive and helpful as a guide in bee-keeping, but is interesting and thoroughly practical and scientific. It contains a full delineation of the anatomy and physiology of bees. 400 pages; bound in cloth and fully illustrated. Price, \$1.00.

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Rational Bee-Keeping, by Dr. John Dzierzon.—This is a translation of his latest German book on bee-culture. It has 350 pages; bound in cloth, \$1.25; in paper covers, \$1.00.

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Amerikanische Bienezucht, by Hans Buschbauer.—Printed in German. A hand-book on bee-keeping, giving the methods in use by the best American and German apiarists. Illustrated; 138 pages. Price, \$1.00.

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Honey as Food and Medicine, by T. G. Newman.—A 32-page pamphlet: just the thing to create a demand for honey at home. Should be scattered freely. Contains recipes for Honey-Cakes, Cookies, Puddings, Foam, Wines, and uses of honey for medicine.

Prices, prepaid—Single copy, 5 cts.; 10 copies, 35 cts.; 50 for \$1.50; 100 for \$2.50; 250 for \$5.50; 500 for \$10.00; or 1000 for \$15.00.

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Commercial Calculator, by C. Ropp.—A ready Calculator, Business Arithmetic and Account-Book combined in one. Every farmer and business man should have it. No. 1, bound in water proof leatherette, calf finish. Price, 40 cts. No. 2, in fine artificial leather, with pocket, silicate slate, and account-book. Price, 60 cts.

Green's Six Books on Fruit-Culture, by Chas. A. Green.—Devoted 1st, to Apple and Pear Culture; 2nd, Plum and Cherry Culture; 3rd, Raspberry and Blackberry Culture; 4th, Grape Culture; 5th, Strawberry Culture. 129 pp.; illustrated. 25 cts.

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Our Poultry Doctor, or Health in the Poultry Yard and How to Cure Sick Fowls, by Fanny Field.—Everything about Poultry Diseases and their Cure. 64 pages. Price, 30 cts.

Poultry for Market and Poultry for Profit, by Fanny Field.—Tells everything about the Poultry Business. 64 pages. Price, 25 cts.

Turkeys for Market and Turkeys for Profit, by Fanny Field.—All about Turkey-Raising. 64 pages. Price, 25 cts.

Book Clubbing Offers.

The following clubbing prices include the American Bee Journal one year with each book named. Remember, that only ONE book can be taken in each case with the Bee Journal a year at the prices named. If more books are wanted, see postpaid prices given with the description of the books on this page. Following is the clubbing-list:

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25. Commercial Calculator, No. 1.....	1.25
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Honey & Beeswax Market Quotations.

CHICAGO, ILL., June 7.—We have our usual dull season which we look forward to and expect. Honey is entirely forgotten during the months of June, July and August. The market is pretty well cleaned up of all grades of honey, so the prospects are encouraging for the coming season. We are getting 13@14c. for light comb. J. A. L.

CHICAGO, ILL., May 23.—The trade in comb honey is very light at this time of the year—as it is between seasons. Soon we will get the new crop, and it will come on a bare market. Just now what little comb sells brings 14c. for the best grades. Extracted, 5@7c. All good grades of beeswax, 30c. R. A. B. & Co.

CINCINNATI, O., July 8.—There is a good demand for extracted honey at 4@7c., with a small supply on the market. Demand is fair for choice white comb honey at 12@14c. Beeswax is in good demand at 25@30c. for good to choice yellow. C. F. M. & S.

KANSAS CITY, Mo., July 20.—Old stock of honey well cleaned up. Some new comb on the market. We quote: New comb, No. 1 white, 1-lbs., 14@15c.; No. 2, 12@13c.; No. 1 amber, 12@13c.; No. 2, 10@11c. Extracted, white, 6@6½c.; amber, 5@6c. Beeswax, 22c. C. C. C. & Co.

PHILADELPHIA, PA., June 18.—The new crop of comb honey is arriving slowly, and is in fair demand. No new extracted honey has arrived in this market as yet. We quote: Comb honey, 9@13c. Extracted, 4@8c. Beeswax is still declining. The adulteration of beeswax has demoralized our market this spring, and has hurt our sales considerably. Price, 25@27c. W. A. S.

NEW YORK, N. Y., July 6.—The market is about bare of comb honey and there is no demand at the present. The market is quiet on extracted. Demand is limited, with plenty of supply arriving to meet the demands and more. We quote: California, 6@6½c.; Southern, choice, 6@6½c. per gallon; common, 5@5½c. per gallon. Beeswax is declining and selling at from 29@30c. at present, but the indications are that the price will decline still further. H. B. & S.

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Square Glass Honey Jars, Etc.
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R. A. BURNETT & Co., 163 South Water Street

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F. I. SAGE & SON, 183 Reade Street.
HILDRETH BROS. & SEGELKEN,
120 & 122 West Broadway
CHAS. ISRAEL & BROS., 486 Canal St.
I. J. STRINGHAM, 105 Park Place.

Kansas City, Mo.

C. C. CLEMOMS & Co., 423 Walnut St.

Buffalo, N. Y.

BATTERSON & Co., 187 & 189 Scott St.

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Queens, 75 cents, or two for \$1.00.

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Tested	each	\$1.50
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Warranted purely-mated	each	.75
" per 1/2 dozen		4.25
" per dozen		8.00

If you want **Queens for business**, get my old reliable strain. 40-p. descriptive Catalogue Free.
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My secret is to sell an extra-large amount, which enables me to sell at low prices. Will run this spring 350 Nuclei—have 1 home and 4 out apiaries. No Queens superior to my strain.

Send for Descriptive Catalogue and Testimonials, to

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24Att **STEELEVILLE, Randolph Co., ILL.**
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Working Wax into Foundation by the lb. a **Specialty**. I can make it an object for you in any quantity, but offer special inducements on straight 25 or 50 lb. lots. Or for making large lot of Wax into Foundation. I am furnishing large Dealers, and can also please you. **Beeswax taken at all times.** Write for Samples and Prices, to

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Untested Italian Queens, by return mail, 75c; Tested, \$1.00; Select Tested, \$1.50.
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Question-Box.

In the multitude of counsellors there is safety.—Prov. 11-14.

Amount of Honey Used by a Colony in One Year.

Query 981.—How much honey does a colony of bees need a year for its own consumption? I mean for the whole year, not merely for winter.—Pa.

Eugene Secor—I don't know.

W. G. Larrabee—I don't know.

W. R. Graham—About 100 pounds.

E. France—I don't know, and won't guess.

Mrs. L. Harrison—Who can tell? I cannot.

G. M. Doolittle—I estimate about 60 pounds.

P. H. Elwood—I don't know. Ask the experiment stations.

Wm. M. Barnum—About 50 pounds. Perhaps a trifle more.

Prof. A. J. Cook—I do not know, but would guess 60 pounds.

J. A. Green—I could only guess at this. Probably 60 to 75 pounds.

J. M. Hambaugh—I do not know, but at a rough guess I will say 80 pounds.

Rev. E. T. Abbott—I do not know. It would depend upon the size of the colony.

H. D. Cutting—All it can get, and in many localities you will have to feed to keep them.

Rev. M. Mahin—I do not know, and at best those who know more about it can only guess.

Dr. C. C. Miller—I don't know. Look at Doolittle's answer. Here's a nut for Experimenter Taylor.

B. Taylor—That depends upon the size of the colony, the length of the winter, and other I cannot answer.

Chas. Dadant & Son—This is almost impossible to answer, as all depends upon the quantity of brood reared.

C. H. Dibbern—There is no way to tell just how much honey bees consume in summertime, therefore I must say I don't know.

Dr. J. P. H. Brown—There is too much depending in this question to give a correct answer. This answer would be guess-work.

R. L. Taylor—I don't know, and I would give a fine present to anyone who would tell me a way by which I could find out for certain.

Mrs. J. N. Heater—I do not know. There are so many things to consider in answering this question, which must of necessity be but a guess.

Jas. A. Stone—I do not see how that could be estimated, as they certainly take a part of what they gather while at work, so it would have to be considered—how much of the time they are at work.

Allen Pringle—That is a question to be guessed at, but we might figure a little thus: In this climate from November 1 to the end of February (4 months of "masterly inactivity"), 5 pounds will do. The two months immediately preceding these and the two

immediately following them (4 months) of say 4 times the activity equals 4 times 5 equals 20, plus 5 equals 25 pounds. The other 4 months of very stirring times, say 8 times the activity, equals 8 times 5 equals 40, plus 25 equals 65 pounds in a year. Of course I would not swear to that.

J. E. Pond—I pass. From 10 to 25 pounds will carry a colony through a long winter, but in the summer bees are at work, and I don't know of any rule by which even a guess could be made. To attempt to answer would, in my opinion, be a mere matter of guess-work.

G. W. Demaree—The amount of honey consumed by a colony of bees in the course of a year is necessarily an unknown quantity, because the number of bees reared by the colony in a year is not a fixed number—some queens are more prolific than others. At best, only a crude approximation is possible, and nothing gained by that.

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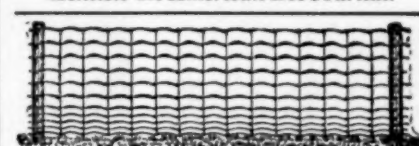
Five cross-bars are rivited in the centre at the top. These bend down and button to studs on a neck-band. The bars are best light spring steel. The neck-band is hard spring brass. The netting is white with face-piece of black to see through. It is easily put together and folds compactly in a case, 1x6x7 inches, the whole weighing but 5 ounces. It can be worn over an ordinary hat; fits any head; does not obstruct the vision, and can be worn in bed without discomfort. It is a boon to any one whom flies bother, mosquitos bite, or bees sting.

Nets, 50 cts. each.

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3 " Queens. 4.00
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Select tested queen, previous season's rearing.. 4.00
Extra Selected for breeding, THE VERY BEST.. 6.00
About a Pound of BEES in a Two-frame Nucleus, with any Queen, \$2.00 extra.

Circular free, giving full particulars regarding the Bees and each class of Queens.
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Have been carefully bred for producing comb honey for the past 18 years, and by a special method for producing large, long-lived, prolific Queens. Can furnish either 3 or 5 Banded stock, bred in separate yards, 3-Banded bred from my own or Imported Mother. No foul brood or paralysis. Warranted Queens, purely mated, 60 cts.; Tested, \$1.00; Selected Breeders, \$2.50. Discount on quantities.

27A1f **J. H. GOOD, Nappanee, Ind.**

Free Silver For You

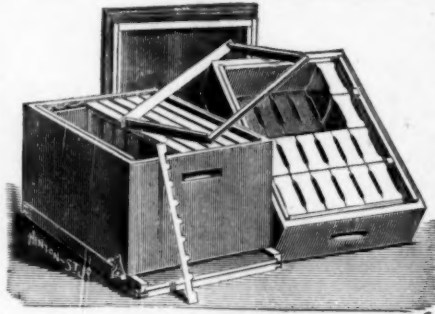
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10 lbs. Heavy or Medium Brood Fdn. \$3.50
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James Reynolds Elevator Co., Poughkeepsie, N. Y.
Page & Lyon, New London, Wis.
La. Bee-Keepers' Supply Co., Donaldsonville, La.
E. F. Quigley, Unionville, Mo.

G. K. Hubbard, Fort Wayne, Ind.
L. Hanssen, Davenport, Iowa.
C. Theilmann, Theilmantown, Minn.
E. C. Eaglesfield, Berlin, Wis.
Walter S. Ponder, Indianapolis, Ind.
E. T. Abbott, St. Joseph, Mo.
J. M. Jenkins, Wetumpka, Alabama
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Queens Sent Promptly.

Other breeders may sell Queens cheaper than I do, but they can't furnish better Queens or fill orders more promptly. Keeping a large number of Queens on hand in nuclei enables me to sell Tested Queens, of this year's rearing, at \$1.00 each, or six for \$5.00, and to send them by **return mail**. More than six Queens (tested) will be sold at 75 cents each, and will **probably** go by return mail unless the order is unusually large, but I don't promise that such shall be the case when the number ordered exceeds six. As a matter of fact, however, every order received the past two months has been filled the **same day it came**. One Queen and the REVIEW for \$1.50. Samples of the Review free.

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It will be manufactured by the Porters, as formerly, but write to us for prices in both large and small quantities.

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